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MINORITY UNIVERSITY AND COLLEGE EDUCATION AND RESEARCH PARTNERSHIP INITIATIVE IN SPACE SCIENCE – 2003

(MUCERPI-2003)

NASA Research Announcement
Soliciting Space Science Education and Research Proposals

NRA 03-OSS-03
Issued: April 1, 2003
Notice of Intent: April 28, 2003
Proposals Due: June 30, 2003

Office of Space Science and Office of Education
National Aeronautics and Space Administration
Washington, DC 20546-0001

MINORITY UNIVERSITY AND COLLEGE EDUCATION AND RESEARCH PARTNERSHIP INITIATIVE IN SPACE SCIENCE – 2003

OFFICE OF SPACE SCIENCE/OFFICE OF EDUCATION
MINORITY UNIVERSITY AND COLLEGE
EDUCATION AND RESEARCH PARTNERSHIP INITIATIVE – 2003
(MUCERPI-2003)
Summary of Solicitation

1. INTRODUCTION TO SOLICITED RESEARCH OBJECTIVES

The National Aeronautics and Space Administration's (NASA) Office of Space Science (OSS) and Office of Education (OE) jointly announce an opportunity for U.S. based minority colleges and universities to propose programs in education and research directed towards the following near-term goals:

• The development of space science-related academic capabilities at minority colleges and universities, and, working through those institutions, the development of space science-related education programs and materials aimed at minority populations in many levels in the education system; and

• The enhancement/development of faculty and students in space science-related fields at minority colleges and universities through the establishment of partnerships and exchange programs in research and education with NASA-supported space science research groups at colleges and universities, NASA Centers, other Federal laboratories, and industrial organizations throughout the country.

The long-term, underlying goals of this Initiative, which is a follow-on to an earlier MUCERPI solicitation released in January 2000, are to enhance minority college (2-year and 4-year) and university participation in space science through a variety of mechanisms, and, more generally, increase the understanding of science, technology, and the role of research in contemporary society by a broad and diverse segment of the American population. A key element of the strategy for accomplishing these goals is to facilitate and foster the development of links between the NASA Office of Space Science, the space science research community, and minority institutions across the country through the establishment of exchange programs and long-term partnerships.

This NRA solicits proposals for a nominal period of performance of three years, starting in January 2004. This solicitation builds upon the many successful efforts initiated under the Minority University Education and Research Partnership Initiative–2000 (MUCERPI-2000) NRA that has supported three-year awards to 15 minority institutions. See Section 4.4 for additional information on these projects.

This solicitation directly supports the NASA Vision Statement,

To improve life here, to extend life to there, and to find life beyond,

and Mission Statement,

To understand and protect our home planet,
To explore the Universe and search for life, and
To inspire the next generation of explorers
…as only NASA can,

The mission "*To inspire the next generation of explorers*" specifically highlights the importance of education within NASA, and an enhanced, coordinated Agency-level education program is now being undertaken through the new NASA Office of Education. NASA's education and public outreach objectives and OSS focus areas are given below in Table 1. This collaboration between the Office of Space Science and Office of Education is an important contribution to achieving the NASA education and public outreach objectives. The space science community is called upon to support these efforts through collaborations and long term partnerships with minority institutions responding to this solicitation.

Within the broad NASA Mission, the NASA Space Science Enterprise program is centered on the NASA strategic goal to explore the solar system and the universe beyond, understand the origin and evolution of life, and search for evidence of life elsewhere. The 2003 *NASA Strategic Plan*, which may be accessed at http://www.nasa.gov/about/budget/content/strategi.pdf, contains a more complete discussion of Agency and Enterprise goals and objectives and the relationship of the work of the Space Science Enterprise to that of the other NASA Enterprises.

In order to pursue its prime strategic goal, NASA's Office of Space Science sponsors a wide range of research programs as organized through four broad science themes:

- *Astronomical Search for Origins and Planetary Systems* (ASO) that addresses the origins of galaxies, stars, proto-planetary and extra-solar planetary systems, Earth-like planets, and the origin of life;
- *Exploration of the Solar System* (ESS) that seeks to understand all aspects of our Solar System, including the planets, satellites, small bodies, and Solar System materials, and the search for possible habitats of life beyond Earth;
- *Structure and Evolution of the Universe* (SEU) that involves the study of cosmology, the large scale structure of the Universe, the evolution of stars and galaxies, including the Milky Way and objects with extreme physical conditions, and an examination of the ultimate limits of gravity and energy in the Universe; and

- *The Sun-Earth Connection* (SEC) that concerns the Sun as a typical star and as the controlling agent of the space environment of the Solar System, especially the Earth.

Further information about these themes, as well as access to the most recent Strategic Plans, for both NASA and OSS, may be found through the menu items "Administration–>Publications" from the OSS homepage on the World Wide Web at http://spacescience.nasa.gov. This link may also be used to obtain information on OSS research programs and the types of research currently being sponsored/solicited by OSS. Such information can be found by consulting past and current NASA OSS Research Announcements that may be accessed through the menu item "Research Solicitations" on the OSS homepage.

Working in close cooperation with the space science community, the first two elements of the NASA Mission relevant to space science have been expanded to define and organize a series of key Science Objectives and subsidiary Research Focus Areas (RFA's) for OSS as shown in Table 2 below (Note: these Science Objectives and RFA's are also used to assess NASA's research progress for compliance with the Gov*ernment Performance Review Act* (GPRA) of 1993).

Particular attention should be paid to the *Space Science Enterprise Strategic Plan*, which contains important information on the overall content and future direction of the OSS program. It is strongly recommended that this *Plan* be read carefully by prospective proposers. Institutions interested in responding to this NRA will be required to demonstrate a direct intellectual and/or programmatic linkage between their proposed education or research program and the current scientific content or future direction of the Space Science Enterprise. To accomplish this, proposers to the NRA are expected to provide an explicit statement in their proposals to show how their proposed activities are related to and support one or more of the science objectives and related RFA's in Table 2. Proposals that do not explicitly demonstrate such a linkage will be considered as nonresponsive to this NRA and may be returned without further review.

Appendix A contains a more detailed description of the Minority University and College Education and Research Partnership Initiative-2003. While this Appendix provides some illustrative examples of the types of programs that might be proposed in response to this NRA, the intent of this Appendix is not to provide an exhaustive or exclusive menu of possibilities. NASA is interested in fostering innovative and creative approaches to the enhancement of academic capabilities at minority colleges and universities and the development of the research capabilities of students and faculty members at such institutions through the establishment of partnerships and exchange programs in space science-related fields. Therefore, all proposals that directly address the program goals of this NRA, as stated in Appendix A, will be considered. Recommendations for funding will be based on the results of peer evaluation by suitable panels of educators and scientists of each proposal's educational and scientific merits and the proposal's prospects

for successfully addressing the stated goals of this announcement using the specific criteria presented in Appendix A.

One of the principal outcomes sought through this Announcement is to foster the development of strong linkages among the NASA Office of Space Science, the space science research community, and minority institutions through the establishment of exchange programs and partnerships. NASA's Office of Space Science and the Office of Education are prepared to actively work with minority institutions to help develop such partnerships. Interested institutions may contact Dr. Philip Sakimoto (philip.j.sakimoto@nasa.gov), Dr. Larry Cooper (larry.p.cooper@nasa.gov), or Dr. Mabel Matthews (mabel.j.matthews@nasa.gov), who will work with minority and nonminority institutions, as well as with the OSS Discipline Scientists to develop suitable contacts in areas of mutual interest. Potential Investigators at minority institutions with particular interests in the development of education programs may also contact the OSS Education and Outreach Broker/Facilitators for assistance. Information on the OSS Broker/Facilitators can be obtained through the Education link on the OSS homepage, or directly at URL http://spacescience.nasa.gov/education/resources/ecosystem/index.htm. While OSS and OE will work to help establish linkages between Minority Institutions and current participants in the space science program--and, through a variety of mechanisms, will strongly encourage those participants to become actively involved in working with minority colleges and universities--they cannot guarantee the success of efforts to establish such partnerships. In all cases, the ultimate responsibility for successfully establishing alliances rests with the proposer.

Experience to date with the awardees selected under the previous solicitation for this program has clearly shown that diverse approaches have been important in realizing the goals of the strategy outlined in Appendix A. Provided that appropriate proposals of merit are submitted, NASA plans to deliberately select proposals of different scopes and associated funding with diverse approaches to implementing these concepts from different types of minority colleges and universities located in many regions of the country. Such considerations will be an explicit part of the selection process in discriminating between proposals of otherwise equal merit.

2. GENERAL POLICIES

2.1 Necessary and Sufficient Conditions for Selections

The Government's obligation to make awards through this NRA is contingent upon the availability of appropriated funds through the Federal budget process from which payment can be made and the receipt of proposals in response to this NRA that NASA determines through peer and programmatic reviews are acceptable for award.

2.2 Inclusiveness of Program Applicants

Participation in this program will be open only to Principal Investigators employed at U.S. colleges and universities designated by the Department of Education as minority educational institutions by the due date for proposals to this solicitation, which is indicated in Section 5. The list of the Department of Education designated minority institutions may be obtained through the World Wide Web URL at http://www.ed.gov/offices/OCR/minorityinst.html. All proposals must originate from one of the following: an accredited minority college or university referred to as an *Other Minority University (OMU)*, as defined in the Higher Education Act [See 20 USC 1135d and 34 CFR 637.4b]*;* a *Historically Black College or University (HBCU)* under Title III of the Higher Education Act of 1965 as amended [See 34 CFR 608.2]; a *Hispanic-Serving Institution (HSI)* under Title III of the Higher Education Act of 1965 as amended [See 20 USC 1059 (c)]; Public Law 102-325, Section 306, July 22, 1992]; a *Tribal College or University (TCU)* cited in Section 532 of the Equity in Education Land Grant Status October 1994; Tribally Controlled Community College Assistance Act of 1978, or the Navajo Community College Assistance Act of 1978, Public Law 95-471.

The goal of this Announcement is to broaden institutional participation in the space science program and not to increase the funding at institutions that are already significant participants. Therefore, HBCU's, HSI's, TCU's, and OMU's that have received a total of $1M or more of funding support from NASA's Space Science Enterprise over the past three years are ineligible to participate as lead institutions for proposals to this NRA. This total does not include funds received under the Minority University Education and Research Partnership Initiative in Space Science-2000 or any other programs directly funded by the NASA Minority University Education and Research Division prior to its reorganization into the NASA Office of Education in February 2003. As discussed in more detail in Appendix A, a portion (up to 25%) of the funds awarded to the lead minority institution may be spent at other institutions to support the development of academic and research partnerships and exchange programs with such institutions.

Participation by non-U.S. organizations in this program is not permitted.

2.3 Awards

Typical awards are expected to be in the range $50K to $275K per year commensurate with the scope, scale, and expected effectiveness and outcome of the proposed space science education or research partnership effort. Subject to the submission of qualified proposals, NASA plans to select and support awards totaling at least $3M per year for three years.

2.4 Safety Policy for Selected Investigations

All prospective proposers to this NRA are advised that the highest priority in all of NASA's programs is given to safety and mission assurance, occupational health, environmental protection, information technology, export control, and security. NASA's safety priorities are to protect: (i) the public, (ii) astronauts and pilots, (iii) the NASA workforce (including employees working under NASA instruments), and (iv) high-value equipment and property. All proposals submitted in response to this solicitation are expected to comply with this policy.

3. Instructions For Preparation and Submission of Proposals

All policies and procedures for the preparation and submission of proposals, as well as those for NASA's review and selection of proposals for funding, are now presented in a separate document entitled *Guidebook for Proposers Responding to NASA Research Announcements* (abbreviated as the *NASA Guidebook for Proposers*) that is accessible by opening the single Web site portal for the submission of proposals to any of the NASA program offices at the World Wide Web URL http://research.hq.nasa.gov/research.cfm and linking through the menu item "Helpful References," or that may be directly accessed at URL http://www.hq.nasa.gov/office/procurement/nraguidebook/ .

By reference, the newest edition of this *NASA Guidebook for Proposers, Edition: 2003 (January 2003)* is hereby incorporated into this NRA, and proposers to this NRA are responsible for understanding and complying with its procedures in Chapters 1, 2, and 3 before preparing and submitting their proposals. Proposals that do not conform to its standards may be declared noncompliant and returned without review. Amendatory guidance to standard NASA policies regarding preparation, submission, and evaluation of proposals that are applicable only to this NRA may be found in Appendix A.

The *NASA Guidebook for Proposers* also provides supplemental information about the entire NRA process, including NASA policies for the solicitation of proposals, guidelines for writing complete and effective proposals, the NASA policies and procedures for the review and selection of proposals, as well as for issuing and managing the awards to the institutions that submitted selected proposals, and Frequently Asked Questions (FAQ's) about a variety of the NASA proposal and award processes and procedures. Comments and suggestions of any nature about this *Guidebook* are encouraged and welcomed and may be directed at any time to Ms. Rita Svarcas, Office of Procurement, Code H, NASA Headquarters, Washington, DC 20546-0001; E-mail: Rita.Svarcas-1@nasa.gov.

The World Wide Web site for submitting both a Notice of Intent (NOI) to propose and a proposal's *Cover Page/Proposal Summary* and *Budget Summary* is given in Section 5, *Summary Information*, below (also Chapters 2 and 3 of the *NASA Guidebook for Proposers* contain detailed information about these two subjects, respectively). A point of contact for assistance in accessing and/or using this Web site is given in the *Summary Information* below; nevertheless, interested applicants to this NRA are urged to access this site well in advance of the various due dates for materials to familiarize themselves with its structure. It is especially important to note that every individual named on the proposal's *Cover Page* must be registered in the NASA data system that is accessible through this Web site and further, that such individuals must perform this registration themselves, i.e., a person may not be registered by a second party, even the Principal Investigator of the proposal in which that person is committed to participate.

4. ITEMS OF SPECIAL IMPORTANCE

4.1 Response to Questions

Questions concerning this NRA may be submitted via E-mail to the individuals listed in Section 5. The questions (with identity of the questioner removed) and answers will be posted on the web site on which this NRA is posted, which may be accessed by following the link to "Research Opportunities" at http://spacescience.nasa.gov. Prospective proposers are advised to check this site frequently for new postings during the proposal preparation period.

4.2 Notice of Intent to Propose

A Notice of Intent (NOI) to propose is requested (but not required) from each prospective Principal Investigator on or before the deadline given in Section 5 in order to assist in the planning for the evaluation of proposals. The NOI requests information, to the extent known at the time of its submission, about the objectives of the proposed investigation and the names, addresses, telephone numbers, and E-mail addresses of all prospective team members and their sponsoring organizations. All material provided to NASA through an NOI is for information only and is not binding on the submitter.

An NOI to propose is submitted by logging into the NASA Headquarters proposal data system at http://proposals.hq.nasa.gov. Access to the Web site for the electronic submission of a NOI for this NRA will then be found under the listing "OSS – Education and Public Outreach" in the menu entitled Division Specific Opportunities. Proposers having difficulty with this activity may send an E-mail to the Help Desk at proposals@hq.nasa.gov.

4.3 Electronic Notification of OSS Research Solicitations

OSS maintains an electronic notification system to alert interested subscribers of the impending release of its research program announcements. Subscription to this service is free and is accomplished through the menu item "*To subscribe to the OSS electronic notification system*" found on the OSS research page at http://research.hq.nasa.gov/code_s/code_s.cfm. Owing to the increasingly multidisciplinary nature of OSS programs, this electronic service will notify subscribers of (i) all NASA OSS research program announcements regardless of the type and science objectives, (ii) amendments to the solicitations that have been released for which the proposal due date is not past, and (iii) special news that OSS wishes to communicate rapidly to those interested in its programs. Altogether a subscriber may expect to receive 40 to 50 notifications per year. Note that OSS does not release this subscription list to any other user, nor does it attempt to discern the identity of the subscribers. Regardless of whether or not this service is subscribed to, all OSS research announcements may be accessed from the menu listing *Current (Open) Solicitations* at the Web site given above as soon as they are posted (typically by 8:30 AM Eastern Time on their date of release).

4.4 Archives of Past Selections

For information about the programs currently funded under the Minority University Education and Research Partnership Initiative–2000, please see the NASA OSS E/PO Annual Report at http://ossim.hq.nasa.gov/ossepo/AppendixA_MinorityInstitutionInitiativeinSpaceScience.html.

For information on research programs funded by NASA OSS, please see http://research.hq.nasa.gov/code_s/code_s.cfm.

5. SUMMARY INFORMATION APPLICABLE TO THIS NRA

• Program Alpha-Numeric Identifier	NRA 03-OSS-03
• Date of NRA Release	April 1, 2003
• Access to text of solicitation	Link through the menu listings *Research Solicitations* → *Current (Open) Solicitations* starting from the OSS home page at http://spacescience.nasa.gov.
• Guidance for preparation and submission of proposals (including default page limits)	*NASA Guidebook for Proposers Responding to a NASA Research Announcement (NRA)-2003* at URL http://www.hq.nasa.gov/office/procurement/nraguidebook/ Amendatory guidance to standard NASA policies regarding preparation, submission, and evaluation of proposals that are applicable only to this NRA may be found in Appendix A
• *Notice of Intent (NOI) to Propose* (strongly encouraged but not required):	
- Desired due date	April 28, 2003
- Web site for electronic submissions	Open http://proposals.hq.nasa.gov/ and select "OSS – Education and Public Outreach" in the menu entitled "Division Specific Opportunities" (for help, address an E-mail to: proposals@hq.nasa.gov, staffed Monday thru Friday 8:00 AM - 6:00 PM Eastern Time).
- Late submission (up to 5 days prior to Proposal Deadline)	- Submit information specified in Section 3.1 of *NASA Guidebook for Proposers* by E-mail to proposals@hq.nasa.gov.

• *Cover Page/Proposal Summary* and *Budget Summary*: - Deadline - Budget Summary - Web site for electronic submission	 - Same as for proposals; print completed items from Web site http://research.hq.nasa.gov Units of dollars only (not thousands of dollars). Open http://proposals.hq.nasa.gov/ and select "OSS – Education and Public Outreach" in the menu entitled "Division Specific Opportunities" (for help, address an E-mail to: proposals@hq.nasa.gov, Monday thru Friday 8:00 AM - 6:00 PM Eastern Time).
• Proposal page limits	Specified in Appendix A
• Submission of proposal (including printout of *Cover Page/Proposal Summary*/*Budget Summary*): - Required Number - Deadline - Address for submission by U.S. Postal Service, commercial delivery, or private courier	 Signed original proposal plus 15 copies 4:30 PM ET on June 30, 2003 MUCERPI-2003 NRA Office of Space Science NASA Peer Review Services 500 E Street, SW, Suite 200 Washington, DC 20024 Telephone: (202) 479-9030

• Selecting Officials	Associate Administrator, Office of Space Science and Associate Administrator, Office of Education
• Announcement of selections	Goal: 150 days after Proposal Deadline or passage of NASA's Fiscal Year 2004 budget, whichever occurs last.
• Initiation of funding for new awards	Goal: 46 days after proposal selections.
• Further information: - For specific MUCERPI-2003 NRA policies and procedures	- Dr. Philip J. Sakimoto Office of Space Science Code S/N NASA Headquarters Washington, DC 20546-0001 E-mail: philip.j.sakimoto@nasa.gov
- For general NRA policies and procedures	- Dr. J. David Bohlin Office of Space Science Code S NASA Headquarters Washington, DC 20546-0001 E-mail: J.David.Bohlin@nasa.gov

6. CONCLUDING STATEMENT

The Office of Space Science and the Office of Education are committed to using space science as a vehicle for deepening the understanding and appreciation of science, mathematics, and technology by all citizens and specifically to broadening the participation in the space science program by institutions that, up to now, have not been directly involved. This effort to establish meaningful partnerships between minority colleges and universities and the broad space science research community is a significant commitment by NASA and should be regarded as part of a sustained process to forge strong links between the two communities. The collaborations and achievements through those collaborations of the MUCERPI-2000 participants demonstrate the potential for what can be done over the longer term.

Your interest and cooperation in responding to the Announcement are appreciated. In addition, comments about the nature and/or structure of this NRA are sincerely solicited and welcome and may be directed to Dr. Sakimoto as identified above.

Edward J. Weiler
Associate Administrator
Office of Space Science

Adena Williams Loston
Associate Administrator
Office of Education

TABLE 1

NASA EDUCATION AND PUBLIC OUTREACH
STRATEGIC GOALS, OBJECTIVES, AND FOCUS AREAS

•***NASA Mission Statement: To Inspire the Next Generation of Explorers***

NASA Strategic Goal I: Inspire and motivate students to pursue careers in science, technology, engineering, and mathematics.

NASA Objectives	OSS Focus Areas
1. Improve student proficiency in science, technology, engineering, and mathematics using educational programs, products, and services based on NASA missions, discoveries, and innovations.	Provide opportunities for students to work directly with NASA space science missions, facilities, and data.
2. Motivate K-16+ students from diverse communities to pursue science and math courses and ultimately college degrees in science, technology, engineering, and mathematics.	Provide new opportunities for participation in the space science program by an increasingly diverse population, including opportunities for minorities and minority universities to compete for and participate in space science missions, research, and education programs.
3. Improve science, technology, engineering, and mathematics instruction with unique teaching tools and experiences that are compelling to teachers and students.	Provide high quality educational materials and teacher training based on space science content and focused on national curriculum standards. Provide exhibits, materials, workshops, and personnel at national and/or regional education and outreach conferences.
4. Improve higher education capacity to provide for NASA's and the Nation's future science and technology workforce requirements.	Provide higher education opportunities offered through OSS research awards and other NASA research and education programs.

<u>NASA Strategic Goal II</u>: Engage the public in shaping and sharing the experience of exploration and discovery.

NASA Objectives	OSS Focus Areas
1. Improve the capacity of science centers, museums, and other informal education institutions, through the development of partnerships, to translate and deliver engaging NASA content.	Through partnerships with major science museums or planetariums, put on display or on tour major exhibitions or planetarium shows based on space science content. Provide materials and technical expertise to support the development of exhibitions and programs at science museums and planetariums.
2. Engage the public in NASA missions and discoveries through such avenues as public programs, community outreach, mass media, and the Internet.	Seek out and capitalize on special events and particularly promising opportunities in the space science program to bring space science to and involve the public in the process of scientific discovery.

TABLE 2

OFFICE OF SPACE (OSS) STRATEGIC GOALS,
SCIENCE OBJECTIVES AND RESEARCH FOCUS AREAS*
**Adapted from the* OSS Strategic Plan – 2003 *and supporting OSS* "Roadmaps"

•***NASA Mission Statement: To Understand and Protect our Home Planet***

NASA Strategic Goal I: Understand the Earth system and apply Earth system science to improve prediction of climate, weather, and natural hazards.

OSS Theme	Science Objectives	Research Focus Areas (RFA's)
Sun-Earth Connection	1. Understand the origins and societal impacts of variability in the Sun-Earth Connection.	Develop the capability to predict solar activity and the evolution of solar disturbances as they propagate in the heliosphere and affect the Earth. Specify and enable prediction of changes to the Earth's radiation environment, ionosphere, and upper atmosphere. Understand the role of solar variability in driving space climate and global change in the Earth's atmosphere.
Solar System Exploration	1. Catalog and understand potential hazards to Earth from space.	Determine the inventory and dynamics of bodies that may pose an impact hazard to Earth. Determine the physical characteristics of comets and asteroids relevant to any threat they may pose to Earth.

•***<u>NASA Mission Statement</u>: To Explore the Universe and Search for Life***

<u>NASA Strategic Goal II</u>: Explore the Solar System and the Universe beyond, understand the origin and evolution of life, and search for evidence of life elsewhere.

OSS Theme	Science Objectives	Research Focus Areas (RFA's)
Sun-Earth Connection	1. Understand the changing flow of energy and matter throughout the Sun, heliosphere, and planetary environments.	Understand the structure and dynamics of the Sun and solar wind and the origins of magnetic variability. Determine the evolution of the heliosphere and its interaction with the galaxy. Understand the response of magnetospheres and atmospheres to external and internal drivers.
	2. Understand the fundamental physical processes of space plasma systems.	Discover how magnetic fields are created and evolve and how charged particles are accelerated. Understand the coupling across multiple scale lengths and its generality in plasma systems.
Solar System Exploration	1. Learn how the Solar System originated and evolved to its current diverse state.	Understand the initial stages of planet and satellite formation. Study the processes that determine the characteristics of bodies in our Solar System and how these processes operate and interact. Understand why the terrestrial planets are so different from one another. Learn what our Solar System can tell us about extra-solar planetary systems.
(continued next page)	2. Determine the characteristics of the Solar System that led to the origin of life.	Determine the nature, history, and distribution of volatile and organic compounds in the Solar System. Identify the habitable zones in the Solar System.

OSS Theme	Science Objectives	Research Focus Areas
(continued) **Solar System Exploration**	3. Understand how life begins and evolves.	Identify the sources of simple chemicals that contribute to prebiotic evolution and the emergence of life. Study Earth's geologic and biologic records to determine the historical relationship between Earth and its biosphere.
	4. Understand the current state and evolution of the atmosphere, surface, and interior of Mars.	Characterize the present climate of Mars and determine how it has evolved over time. Investigate the history and behavior of water and other volatiles on Mars Study the chemistry, mineralogy, and chronology of martian materials. Determine the characteristics and dynamics of the interior of Mars.
	5. Determine if life exists or has ever existed on Mars.	Investigate the character and extent of prebiotic chemistry on Mars. Search for chemical and biological signatures of past and present life on Mars.
	6. Develop an understanding of Mars in support of possible future human exploration.	Identify and study the hazards that the martian environment will present to human explorers. Inventory and characterize martian resources of potential benefit to human exploration of Mars.

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Theme	Science Objectives	Research Focus Areas (RFA's)
Astronomical Search for Origins	1. Understand how today's Universe of galaxies, stars, and planets came to be.	Learn how the cosmic web of matter organized into the first stars and galaxies and how these evolved into the stars and galaxies we see today. Understand how different galactic ecosystems of stars and gas formed and which ones might support the existence of planets and life.
	2. Learn how stars and planetary systems form and evolve.	Learn how gas and dust become stars and planets. Observe planetary systems around other stars and compare their architectures and evolution with our own.
	3. Understand the diversity of other worlds and search for those that might harbor life.	Characterize the giant planets orbiting other stars. Find out how common Earth-like planets are and see if any might be habitable. Trace the chemical pathways by which simple molecules and dust evolve into the organic molecules important for life. Develop the tools and techniques to search for life on planets beyond our Solar System.
Structure and Evolution of the Universe (continued next page)	1. Discover what powered the Big Bang and the nature of the mysterious dark energy that is pulling the Universe apart.	Search for gravitational waves from the earliest moments of the Big Bang. Determine the size, shape, and matter-energy content of the Universe. Measure the cosmic evolution of the dark energy, which controls the destiny of the Universe.
	2. Learn what happens to space, time, and matter at the edge of a black hole.	Determine how black holes are formed, where they are, and how they evolve. Test Einstein's theory of gravity and map space-time near event horizons of black holes. Observe stars and other material plunging into black holes.

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OSS Theme	Science Objectives	Research Focus Areas
(continued) **Structure and Evolution of the Universe**	3. Understand the development of structure and the cycles of matter and energy in the evolving Universe.	Determine how, where, and when the chemical elements were made, and trace the flows of energy and magnetic fields that exchange them between stars, dust, and gas. Explore the behavior of matter in extreme astrophysical environments, including disks, cosmic jets, and the sources of gamma-ray bursts and cosmic rays. Discover how the interplay of baryons, dark matter, and gravity shapes galaxies and systems of galaxies.

APPENDICES

APPENDIX A. DESCRIPTION OF PROGRAM OPPORTUNITY

APPENDIX A

PROGRAM DESCRIPTION:
OFFICE OF SPACE SCIENCE/OFFICE OF EDUCATION
MINORITY UNIVERSITY AND COLLEGE
EDUCATION AND RESEARCH PARTNERSHIP INITIATIVE – 2003

A.1 SCOPE OF THE PROGRAM

NASA agency-wide recognizes that critical steps must be taken to broaden the participation of underrepresented groups and minority institutions in NASA research programs and missions. As discussed in the *NASA's 2003 Strategic Plan*, NASA's education strategy "pays particular attention to minority and underrepresented populations to ensure that our Nation's diverse communities have access to NASA's unique opportunities. We will use the excitement of our missions and programs to inspire more students to pursue the study of science, technology, engineering, and mathematics and, ultimately, to pursue careers in aeronautics and space. NASA will also support educators in their efforts to increase student proficiency in these disciplines."

A.1.1 Eligible Institutions

As indicated in the Summary of Solicitation of this NRA, participation in this program will be open only to Principal Investigators employed at U.S. colleges and universities designated by the Department of Education as a minority educational institution by the due date for proposals to this solicitation. In all cases, an educational institution is defined to be a university or two-year or four-year college (including a U.S. community college) accredited to confer degrees beyond that of the K-12 grade levels (all such institutions are considered by NASA as nonprofit).

A.1.2 Categories of Opportunity

In order to meet both the long-term and near-term goals stated earlier, as well as to encourage and foster the development of linkages among the NASA Office of Space Science, the space science research community, and minority institutions, this Announcement solicits education and research proposals in the following two broad categories:

- Academic Program Development, and
- Faculty/Student Professional Enhancement and Development Through Partnerships and Exchange Programs.

The following sections explain each category and provide a few examples of the types of programs that might be proposed in response to this NRA. It should be noted that proposals in these areas were both received and accepted in the previous MUCERPI solicitation released in 2000. Because this NRA encourages innovative and creative

approaches to the development of space science-related academic and research capabilities at minority institutions, this list of examples should be regarded as illustrative and not as exclusive or exhaustive.

A.1.2(a) Academic Program Development

The objective of this Category of Opportunity is to support the development of space science-related academic capabilities at minority colleges and universities and, working through those institutions, the development of space science-related education programs and materials aimed at minority populations in many levels in the education system. Consequently, this Category of Opportunity focuses on undergraduate education and on programs directed towards K-12 education and the broad public understanding of NASA space science. It is expected that any proposed K-12 or public education programs will be undertaken in partnership with suitable outside organizations such as school districts, science museums, planetariums, or other appropriate education partners and evidence of such partnerships must be provided by Letters of Commitment from university departments and/or colleges and corresponding levels in other organizations.

Proposals dealing with the precollege education system are expected to be aligned with standards-based education and ongoing educational systemic reform efforts. Academic programs that contribute to the development of preservice or inservice teachers also are strongly encouraged. While graduate education is not the major area of emphasis for this Announcement, in exceptional cases, proposals for the development of new graduate courses will be considered as well.

Proposals in this category should explicitly demonstrate that the development of enhanced faculty instructional/student learning capabilities will contribute to the development of improved academic capabilities of the proposing institution and will be aligned with the long-term plans of that institution.

A few illustrations of activities that might be proposed in this category are to:

- Provide the opportunity for current college and university faculty, visiting faculty, new faculty hires, and/or temporary faculty to assume primary responsibilities for revising existing courses and/or developing new undergraduate space science-related courses for science majors, nonscience majors, and/or special science courses for preservice teachers;

- Establish space science courses for minority and/or underserved students in rural or remote areas using modern communications technology such as satellite/video distance learning or web based, online Internet instructional delivery systems (such courses might be developed by an individual minority institution or by a consortium of minority institutions); and/or

- Develop new space science-related summer institutes or workshops for inservice teachers that work with minority and/or underserved students.

This Category of Opportunity also invites proposals encouraging minority institutions to establish meaningful collaborations/partnerships to enhance education with space science content in a broad spectrum of other institutions, including K-12 schools, museums, planetariums, community organizations, etc. Examples of programs that might be carried out by a minority college or consortium of such institutions in collaboration with local education systems or community organizations are:

- Programs that introduce K-12 students and teachers to the fundamental science, mathematics, or technology of NASA space science;

- K-12 enrichment programs/courses targeted to promising high school students in science, mathematics, engineering, and technology (SMET) centered on space science content (e.g., Saturday programs focused on space science topics); and/or

- Programs that take advantage of unique capabilities or ongoing programs that may exist in the community (e.g., lecture series, planetarium shows, informal science education classes) to provide new space science-related educational opportunities to the general public.

A.1.2(b) Faculty/Student Professional Enhancement and Development Through Partnerships and Exchange Programs

In many minority institutions, both students and faculty may work in relative isolation and not have ready access to the types of intellectual and institutional support systems readily available at other types of institutions, particularly those that are currently deeply involved in state-of-art space science research. Unfortunately, such research institutions are also generally unfamiliar with the capabilities of the students and faculty at minority institutions—a situation that can (and often does) unintentionally limit opportunities for both parties.

Therefore, the objective of this Category of Opportunity is to enhance the capabilities of minority institutions to become proficient in up-to-date space science research through education partnerships and/or exchange programs between minority universities and the NASA-supported space science research community. Such partnerships and exchange programs might take on a variety of forms in order to accomplish a variety of purposes such as:

- Providing opportunities (through short or long-term visits) for faculty from a minority institution to participate in research/education efforts at the partnering institution in order to gain a better appreciation of current research and to develop new technical, experimental, observational, theoretical, or

computational skills that can be used to enhance academic and research programs at their home institutions;

- Providing opportunities for students and faculty from minority institutions to carry out short-term or long-term visits to partnering institutions in conjunction with the planning/implementation of long-term collaborative research programs;

- Providing opportunities for students from minority institutions to enrich their academic experiences by taking appropriate space-science related courses not otherwise offered at their home institution during a summer or an academic semester at a partnering institution;

- Providing opportunities for current space science researchers in major research institutions to carry out short or long-term visits to minority institutions to work with faculty to develop new courses, organize seminars and other academic programs, help assess student readiness for undertaking advanced work and jointly develop strategies to help bridge potential education gaps, conduct research or teach at a minority university during an extended visit, or work with minority institutions to help them develop their own research capabilities;

- Enhancing the research capabilities available to faculty and students at minority institutions by providing ready access on an ongoing basis to laboratory or computational capabilities or to special expertise that may only be available at a partnering institution; and/or

- Enabling the space science research community to learn about or gain a deeper appreciation of the capabilities of minority institutions, faculty members, and, perhaps most importantly, the students at colleges and universities with whom, up to now, they have not worked on a regular basis.

Proposed programs for this Category of Opportunity must be based on appropriate research and/or education partnerships between minority institutions and space science research groups located at universities, NASA Centers, Federal Laboratories, or other types of research institutions throughout the country. Evidence of such partnerships must be provided by Letters of Commitment from university departments and/or colleges and corresponding levels in other organizations. Proposals that do not involve such a partnership will not be considered. The collaboration(s) must be an integral element of the proposal and involve an ongoing relationship between the partners extending throughout the entire period of performance of any award resulting from this solicitation. The collaborations must be undertaken in concert with and in support of the proposing institution's long range goals and plans and should leave a lasting mark upon the proposing institution. Research efforts should be undertaken to strengthen the proposing institution's efforts in space science, bring its researchers up-to-date in

space science research and to enhance the proposing institution's stature in the space science community. Individual, stand-alone research collaborations that primarily benefit the proposing individual are insufficient and non-responsive to the goals of this solicitation. Efforts of this nature should be proposed to other solicitations such as the annual OSS Research Opportunities in Space Science.

In order to support activities undertaken by a partner, up to 25% of awarded funds may be spent at or by the collaborating institution(s) to support exchange visits, the development of joint research or education programs, or other appropriate purposes. Additional guidance is given in Section A.2 of this Appendix.

As indicated in the Summary of Solicitation of this NRA, the Office of Space Science and the Office of Education are prepared to work with minority colleges and universities to help facilitate suitable partnerships and exchange programs with space science research groups across the country. While OSS and OE will work to help establish linkages between minority institutions and current participants in the space science program—and, will strongly encourage those participants to become actively involved in working with minority colleges and universities—they cannot guarantee the success of efforts to establish such partnerships. In all cases, the ultimate responsibility for successfully establishing alliances rests with the proposer.

A.2 PROGRAMMATIC INFORMATION

A.2.1 Program Guidelines and Constraints

Proposals that do not meet the following Program Guidelines and Constraints will not be considered further in the evaluation process. To be considered for selection under this NRA, proposals must:

- Demonstrate a direct intellectual and/or programmatic linkage between their proposed education or research program and the current scientific content or future direction of the Space Science Enterprise. To accomplish this, proposers to this NRA are expected to provide an explicit statement in their proposals to show how their proposed activities are related to and support one or more of the science objectives and related RFA's in Table 2. Proposals that do not explicitly demonstrate such a linkage will not be considered for funding. While proposals dealing with the technology and engineering aspects of space science may be submitted as part of a broad program of space science education/research, proposals primarily centered on technology or engineering will also not be considered.

- Be focused on program activities such as enhancement of instructional/student learning capabilities, development of course/curriculum materials, and professional enhancement rather than supporting large capital expenditures for

hardware, equipment, or building improvements. Where appropriate, a modest amount of funding (up to 15% of the total budget) may be used to acquire necessary equipment to support the proposed education or research activity or to develop the capability to continue a collaboration at the proposer's home institution provided that a clear need is demonstrated in the proposal to justify a request for such expenditures. Large capital expenditures for hardware or costs for building improvements are not allowable.

- Be based on appropriate (and documented) partnerships/collaborations for programs that involve activities to enhance the educational or research capabilities of faculty/students through partnerships and exchange programs. Furthermore, such partnerships must involve a genuine sustained relationship throughout the entire period of the award. [Note that, as indicated in the previous section, stand-alone research projects undertaken by a single institution will not be supported under this NRA. Other avenues for support of such activities (e.g., Office of Space Science Research Announcements, Minority University Research and Education Faculty Awards for Research, NASA Education Summer Faculty Fellowships, and the NASA Administrator's Fellowship Program) are available. Information about such research opportunities can be accessed from the NASA Homepage http://www.nasa.gov/. In particular, OSS research announcements may be accessed and downloaded by linking through to *"Research Opportunities"* on the OSS homepage menu at http://spacescience.nasa.gov/ .]

- Be submitted by a single Principal Investigator from an eligible minority institution as defined in Section A.1.1 who will be programmatically and financially responsible for all aspects of the overall planning, implementation, and evaluation of the proposed education and/or research program effort.

- Involve the expenditure of funds primarily for programs being carried out at or directly by minority institutions. For programs involving interactions such as partnerships, collaborations, or exchanges with other institutions, a maximum of up to 25% of the project's annual budget may be spent on activities undertaken in support of these activities by other institution(s). In such cases, appropriate partners or Co-Investigators, having clearly defined, integral roles and responsibilities in the proposed program, must be identified in the proposal together with evidence (such as Letters of Commitment) supporting their commitment to participate in the collaborative activity.

Proposals from institutions currently funded under the Minority University Education and Research Partnership Initiative-2000, must clearly demonstrate that the proposed efforts represent major new directions in their space science work and/or significant additional enhancements to their institutional capability in space science. Proposals that merely request support for routine continuation of existing activities will not be accepted. Proposals from these institutions should specifically

address the relationship between the proposed activities and the work currently underway that is supported through the 2000 program.

A.2.2. Awards Information

All awards will be made as grants. Typical awards are expected to be in the range $50K to $275K per year commensurate with the scope, scale, expected effectiveness, and outcome of the proposed space science education or research partnership effort. Awards are expected to be for up to three years with continuation past the first year contingent upon the annual demonstration of satisfactory progress and the availability of funds. Subject to the submission of qualified proposals, NASA plans to select and support awards totaling at least $3M per year for three years.

Program Initiation Meeting: Selected proposers will be invited to a program initiation meeting at NASA Headquarters to be held thirty (30) to sixty (60) days after awardees have received funding; the selectees will be informed in advance of the format of the meeting and information they will need to provide.

A.2.3 Continuation Beyond the Initial Year

Awards for periods of performance of more than one year will be required to submit a satisfactory *Annual Progress Report*. In any event such continuation will always by contingent on the availability of funds. This *Annual Progress Report* must demonstrate satisfactory progress together with an outline of plans for the follow-on year. Details for submission of *Annual Progress Reports* will be provided to awardees during the program initiation meeting at NASA Headquarters. In addition to the *Annual Progress Report*, awardees will be required to input a summary report into a NASA electronic reporting system for Education and Public Outreach programs. Additional details on the format and submission due dates will be provided with awards. Examples of the type of reports provided by current program participants may be found at http://ossim.hq.nasa.gov/ossepo/AppendixA_MinorityInstitutionInitiativeinSpaceScience.html

A.2.4. Annual Conference

Awardees will be required to attend an annual conference at which both the Principal Investigator (PI) from the lead institution and key Co-Investigators (Co-I's) from partnering institutions identified in the proposal will be expected to attend and participate. Proposals should budget for appropriate travel to support this activity. For planning purposes, it should be assumed that these meetings will be held in the Washington, DC area. This conference will be an excellent opportunity for participants to meet, formally and informally, to discuss "lessons learned," to interact with OSS scientists and program managers, and to establish the foundations for new collaborations and cooperative activities.

A.3 Responsibilities of Parties

For proposals selected through this NRA, proposers must demonstrate that (i) the necessary capabilities for conducting the proposed activities exist in their own facilities or at those of collaborating institutions (which may include educational institutions, profit and nonprofit organizations, NASA centers, and other Government agencies) cited in the proposal; and (ii) the proposed effort will be led by a single Principal Investigator (PI) from a qualifying minority institution, who has overall responsibility for the program. There is no limit on the number of Co-Investigators (Co-I's) from the lead or collaborating institutions, but each Co-I must have distinct, well-defined responsibilities that are clearly specified in the proposal.

A.4 Instructions for Preparation and Submission of Proposals

The only departures allowed from the standard provisions for the preparation of proposals are those indicated below in A.4.1 through A.4.2.

A.4.1 Page Limits

The page limits given in Section 2.3.1 of the *NASA Guidebook for Proposers-2003* apply with the exception that the scientific/Technical/Management section may have up to 20 pages instead of 15.

A.4.2 Budget Details - Additional Guidance

A budget plan may request funding for a period of up to three years. The proposal must explicitly demonstrate that the proposed work can actually be done using available and/or requested resources. Regardless of whether NASA funding is requested or not by the lead or any partner institution, the Budget Details must demonstrate how all goods and services involved in the proposal are to be obtained. This plan should identify all resources and sources of funding to be used to support the work, including specific grant funds, cost sharing arrangements with other institutions, no-cost contributions, and any other known or potential commitment of resources. If the proposed approach includes activities directly applicable to the project that are currently funded from a non-OSS NASA program (e.g., the NASA Space Grant Program), this source of support should be identified in the program as a contributing resource. In such a case, it is the obligation of the proposer to fully inform and coordinate with the appropriate NASA program manager(s) or technical monitor(s) of the currently funded activities regarding their additional intended uses in support of funds requested under this NRA.

Proposers must provide separate Proposal Budget Summaries and explanatory text for each Partner or Co-I institution associated with the project (see outline of approved entries in section 2.3.11(a) of the *NASA Guidebook for Proposers).* These Budget Summaries are to be included as Appendices to the proposal. Note that the Budget Summary to be submitted electronically as part of the Cover Page must include all costs associated with the proposal.

Any financial resources that the institutions will contribute to the project, such as contributions from non-Federal sources, institutional funds, or use of inkind resources, are considered cost sharing contributions and are properly entered in line 6 of the Budget Summary. Cost sharing is encouraged in order to extend the reach of the institution's proposed project activities; however, cost sharing is not a requirement of this NRA. Any cost-sharing arrangements or other possible financial or inkind contributions from other sources that could be used to enhance the effort to be undertaken with support requested under this NRA should be specifically discussed in the Budget Details section of the proposal.

As indicated in the NASA *Guidebook for Proposers*, Allowable Costs are governed by FAR Part 31 and the NASA FAR Supplement Part 1831 (and OMB Circulars A21 for educational institutions and A122 for nonprofit organizations). In particular, the proposer may consider the following items in addition to other reasonable and realistic expenses required to carry out the work of the effort. Specifically, funds may be requested to:

- Hire new, adjunct, temporary, and/or visiting faculty, or to provide current faculty appropriate incentives (e.g., release time, student assistants) to revise courses/curriculum materials, or to develop new course activities and/or laboratory experiences;

- Support faculty/student participation in summer or academic year research activities as part of a partnership or exchange program;

- Support reasonable travel expenses for proposed professional faculty enhancement activities;

- Provide a modest amount of support to purchase laboratory/instructional technology, or research equipment (not to exceed 15% of each year's total budget); and

- Support modest costs for refurbishing or upgrading existing equipment (note: as stated in Section A.2.1, large capital expenditures for hardware or costs for building improvements are not allowed through this NRA).

A.5 Proposal Evaluation

Although OSS and OE secure educational, scientific, or technical evaluations from appropriately qualified peers of the proposers, proposers must provide sufficient detail in their proposals to enable proposal evaluation based solely on the information contained within the proposal by these knowledgeable persons. The evaluation criteria for this NRA apply to both Categories of Opportunity defined in Section A.1.2.

EVALUATION CRITERIA FOR SELECTION

Proposals submitted in response to this NASA Research Announcement will be prescreened to ensure that they meet the eligibility requirements described in Section A.1.1 and satisfy the Program Guidelines and Constraints outlined in Section A.2.1. Proposals not meeting these requirements, guidelines, and constraints will be returned to the proposers and not considered any further in the evaluation/selection process. The evaluation criteria for this NRA are given in Section C.2 of Appendix C of the *NASA Guidebook for Proposers*, where it is understood that the criteria of intrinsic merit shall specifically include the following four factors, each weighted as indicated:

(1) **Project Significance and Quality (30%)** – A compelling argument is provided that the project is actually worth doing. The proposal contains a carefully thought out approach and presents a clear case for the project's intrinsic educational or scientific merit. Proposals will be expected to:

- Clearly define a need or set of needs and describe how the project's goals are related to addressing those needs;
- Identify realistic, measurable outcomes that are expected to result from implementation of the project, discuss the importance of those outcomes, and show how the project will contribute to education and/or research and increase knowledge or understanding of NASA Space Science;
- Clearly show how the project addresses and makes a substantive contribution to meeting both the near and long-term goals and objectives described in this NRA;
- Demonstrate the potential of the proposed activity to serve as an effective educational or research model that can be exported to or adapted by similar educational institutions;
- Be based on approaches that reflect a basic knowledge and understanding of the "best educational" practices dealing with precollege education or the training of precollege teachers; developing science, mathematics, and technology curricula; delivering effective professional enhancement workshops; and using standards-based approaches to teaching/learning for incorporating space science-related topics into precollege classrooms; and
- Contain an appropriate and thorough plan for evaluating the effectiveness and impact of the proposed effort. The plan should present a coherent approach for evaluating the results of the proposed program and show how the proposed methods of evaluation are thorough, practical, and consistent with the goals, objectives, and outcomes of both the proposed project and this NRA.

(2) **Project Feasibility (25%)** – The proposal provides evidence that the proposing team has the capability and experience to carry out the project, that appropriate facilities or institutional capabilities are available for accomplishing the work, and that appropriate commitments have been obtained from potential partners. Proposals will be expected to:

- Present a credible and effective approach for accomplishing the work and achieving the stated project goals and objectives on time and within budget;
- Show that the qualifications, capabilities, and experience of the Principal Investigator and other key personnel are appropriate and adequate for successfully implementing the proposed project;
- Show that facilities, equipment, or institutional capabilities required for carrying out the work are available and accessible; and
- Document, where appropriate, partnerships or collaborations, showing how those collaborations contribute to achieving the proposed project's goals and objectives and will be sustained throughout the period of the award, and demonstrate how such collaborations extend and amplify the proposer's capabilities for carrying out the work. All proposed partnerships and collaborations should be supported by Letters of Commitment from university departments and/or colleges and corresponding levels in other organizations and be provided with the proposal.

(3) **Prospects for Institutional Development (25%)** – The proposal clearly demonstrates that proposed activities will directly contribute to improving the institution's capabilities to carry out space science-related educational or research programs by building on and extending existing strengths, establishing new areas of capability and competence, improving faculty instructional or research capabilities, contributing to the development of new or improved courses, or providing new educational or research opportunities for students. Proposals must specifically address and document: 1) the relationship between the goals and objectives of the proposed activity and the proposing institution's goals, objectives, and long-term plans for participation and contribution to space science research and/or education; and 2) the prospects for sustainability of the proposed activity beyond the period of direct NASA support. Letters of Commitment are required to indicate the institution's longer-term commitment and plans to develop a sustained academic and/or research program in space science as part of its own institutional growth and development.

(4) **Adequacy of Management Approach (20%)** - The management approach for carrying out the proposed work is sound. Clear responsibilities for each participant and clear lines of authority for managing resources and for overseeing implementation of the work are identified. Timelines and milestones for accomplishing project tasks are clearly defined and outlined. The proposal provides the assurance that the effort can be successfully carried through to completion on time and within budget.

As indicated in Appendix B(i) of the NASA Guidebook for Proposers, the evaluation of the cost of a proposed effort may include the realism and reasonableness of the proposed costs and available funds. For this NRA, this is specifically taken to mean that the proposal demonstrates that all aspects of the proposed work can be done using available and/or requested financial resources, that the proposed costs are reasonable and realistic, and that the budget for each year is appropriate and clearly related to the tasks and activities that have been proposed.

A.6 Proposal Selection and Program Initiation

Recommendations for funding will be based on the results of peer evaluation by suitable panels of educators and scientists of each proposal's educational and scientific merits and the proposal's prospects for successfully addressing the stated goals of this announcement using the specific criteria presented in Section A.5 above. As indicated in this NRA's Summary of Solicitation, the Office of Space Science and Office of Education plan to sponsor a variety of approaches to developing academic programs, enhancing the capabilities of students and faculty, and establishing education and research exchange programs and partnerships among a wide variety of institutions as a means of testing the effectiveness of the strategy outlined in this Announcement. Therefore, based on the submissions of proposals of adequate merit, NASA plans to deliberately select proposals of different scales with diverse approaches to implementing these concepts from different types of minority colleges and universities located in many regions of the country, and to evaluate the effectiveness of a broad range of approaches to meeting the goals of this announcement. Such programmatic considerations will be an explicit part of the selection process.

Following peer evaluation, the cognizant OSS and OE staff will further review the top rated proposals against the programmatic objectives and financial resources available and will develop a recommendation for selection to the designated NASA Selecting Officials (identified in this NRA's Summary of Solicitation). The Selecting Officials will make the final selections.

Notification of selection decisions will be made according to the schedule contained in the Summary of Solicitation. Debriefings by phone or mail of all nonselected proposals will be provided on request within approximately five weeks following announcement of selections.